

REMARKS

This preliminary amendment accompanies a request for continued examination (RCE).

Claims 1, 3, 6, 7, 10 and 12 are pending for further examination.

Claims 4, 5, 8 and 9 were withdrawn as the result of a restriction requirement.

In the restriction requirement, claims 1, 6, 10 and 12 were identified as generic. If any of those claims is allowed, applicant requests consideration (and allowance) of the claims directed to a non-elected species.

Independent claim 1 has been amended to incorporate the features of claim 2 (now canceled) and to recite that the Bragg diffraction grating is formed in the protruding part of the optical fiber after securing of the optical fiber. Claims 10 and 12 also recite that the Bragg diffraction grating is formed in the protruding part of the optical fiber after securing of the optical fiber. As explained in an embodiment disclosed in the Specification:

[T]he Bragg diffraction grating 13 can be produced easily in the protruding part of the optical fiber 3 on the mounting surface 9 after the optical fiber 3 is secured to the ferrule 1. Consequently, it is possible to prevent occurrence of a change in the reflective characteristic of the Bragg diffraction grating 13 formed in the optical fiber 3.

(Page 18, line 19 – page 19, line 1) Thus, the claimed subject matter can help address changes that might otherwise occur in the grating characteristic if the Bragg diffraction grating were formed prior to securing the fiber.

In the final Office action, the claims were rejected under 35 U.S.C. § 103 as obvious from U.S. Published Application 2001/0019648 (Nobuhara et al.) in view of U.S. Patent no. 6,273,620 (Kato et al.). Applicant respectfully requests reconsideration.

The Nobuhara published application discloses various embodiments of optical modules that include a ferrule assembly 16 and a planar lightwave circuit (PLC) 4 formed in a silicon substrate 6. A “bare” optical fiber (page 5, par. 0082) extends from a through hole 20 in the

ferrule 16 and lies on a flat, cut portion of the ferrule. In each embodiment, the ferrule 16 is fixed to the silicon substrate so that the fiber 22 is sandwiched between the ferrule 16 and the silicon substrate 6 (*see, e.g.*, FIGS. 2 and 3).

Although the Office action acknowledged that the Nobuhara published application does not disclose a Bragg diffraction grating formed in the protruding part of the optical fiber, the Office action alleged that it would have been obvious to include such a grating in view of the Kato et al. patent. Applicant respectfully disagrees.

First, as previously explained, although the Kato et al. patent discloses a Bragg grating near the tip of the fiber (col. 3, lines 21-31), a person of ordinary skill would not have been motivated to incorporate such a grating into the fiber disclosed in the Nobuhara published application. As mentioned above, in the embodiments disclosed in the Nobuhara published application, the ferrule 16 is fixed with adhesive to the silicon substrate so that the fiber 22 is sandwiched between the ferrule 16 and the silicon substrate 6. If a Bragg grating were formed on such a fiber, the arrangement would result in the same type of problems mentioned at pages 1-2 of the pending specification:

An optical fiber having a Bragg diffraction grating formed therein is firmly fixed to a mounting member such as a ferrule by applying an adhesive between the part of the optical fiber that is located within the ferrule and the interior walls of the ferrule. In such a case, when the optical fiber is secured to the ferrule, *such securing causes stress directly on the optical fiber, particularly at the area where a Bragg diffraction grating has been formed, and such stress changes the reflective characteristic of the Bragg diffraction grating.*

Therefore, one of ordinary skill would not have been motivated to provide a Bragg grating on the fiber 22 of the Nobuhara published application for use as an optical wavelength filter because of such problems (*i.e.*, the changes in the reflective characteristics of the Bragg grating caused by stresses as a result of securing the fiber between the ferrule 16 and the silicon substrate 6).

The final Office action alleges (at the top of page 3) that there would have been a motivation to incorporate a Bragg diffraction grating into the optical module of the Nobuhara et al. application – *i.e.*, to prevent the generation of fiber bends and to make the fiber more resistant to temperature variations. As explained below, that is incorrect.

The Office action points to paragraph [0088] of the Nobuara et al. application. That paragraph simply explains why the bare optical fiber is fixed by adhesion in the ferrule. It provides absolutely no motivation as to why one ordinary skill would have been motivated to incorporate the diffraction grating disclosed by the Kato et al. patent.

In contrast, the applicant's remarks above explain why one of ordinary skill would not have been motivated to combine the references as suggested by the Office action.

There is simply no “clear and particular” suggestion for combining the references as required by the courts. *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v. Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002).

Furthermore, even if the disclosures of the Nobuhara et al. application and the Kato et al. patent were somehow combined, that would not result in the claimed subject matter. In particular, there would have been no suggestion that the Bragg diffraction grating is formed in the protruding part of the optical fiber after securing of the optical fiber as recited in claims 1, 10 and 12.

Instead, according to the structure disclosed by the Kato et al. patent, the fiber would need to be provided with the Bragg grating before the fiber is inserted into the ferrule. That is because the Bragg grating is near the front end of the fiber. As explained above, however, forming the Bragg grating on the fiber before the fiber is secured can lead to changes in the grating characteristics as a result of stresses that occur when the fiber is secured.

Therefore, there is no “clear and particular” suggestion of the claimed subject matter.

Applicant : Yoshiki Kuhara
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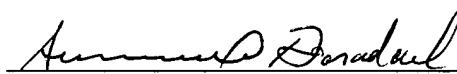
Attorney's Docket No.: 12852-019001 / 103058-US-00

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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Samuel Borodach
Reg. No. 38,388

Fish & Richardson P.C.
Citigroup Center
52nd Floor
153 East 53rd Street
New York, New York 10022-4611
Telephone: (212) 765-5070
Facsimile: (212) 258-2291

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